



Published in final edited form as:

*Lancet Glob Health*. 2015 February ; 3(2): e63–e64. doi:10.1016/S2214-109X(14)70367-5.

## A door-to-door approach to cervical cancer screening

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In *The Lancet Global Health*, Silvina Arrossi and colleagues<sup>1</sup> report a cluster-randomised trial to investigate the effectiveness of using an existing network of trained community health workers to implement self-collection of samples for high-risk human papillomavirus (HPV) detection among women in Jujuy, Argentina—a region with one of the highest cervical cancer mortality rates nationally. In their Article, Arrossi and colleagues highlight two important issues. First, self-collection for HPV detection is an important method to reach women who are rarely or never screened. Second, non-clinicians such as community health workers can have a key role in increasing coverage.

Screening based on Papanicolaou (Pap) tests has significantly reduced cervical cancer incidence in high-income countries;<sup>2</sup> however, a small but important proportion of women are still rarely or never screened (eg, 11% in the USA).<sup>3</sup> Screening coverage in low-income and middle-income countries is fairly low, in part because of limited resources and health infrastructure, including a shortage of health professionals to do screening.<sup>4</sup> Self-collection of cervicovaginal samples for detection of HPV could eliminate the need for an initial pelvic examination by a trained health professional and increase screening coverage in countries of low income and middle income and hard-to-reach populations in high-income countries. Self-collection is highly acceptable among women,<sup>5,6</sup> and self-collected samples are comparable to clinician-collected samples for detection of HPV when analysed with several PCR-based tests.<sup>7</sup> In Europe, self-collection kits delivered to rarely screened women via the postal system increased cervical cancer screening coverage.<sup>8</sup> Since postal systems in low-income and middle-income countries are less reliable, alternative delivery methods need be considered in the implementation of self-collection for HPV detection in these countries.

Community health workers, also referred to as lay health workers, are typically members of a community who receive some training to provide health services or health promotion. Organisation and compensation of community health workers ranges from paid employees in a country's health-care system—such as in Argentina—to unpaid volunteers in other countries.<sup>9</sup> Community health workers have been successful in significantly increasing childhood immunisation uptake, breastfeeding, and tuberculosis cure rates.<sup>10</sup> In a

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The views expressed in this Comment do not necessarily represent the official position of the US Centers for Disease Control and Prevention. VS has written abstracts and reports analysing data from research projects funded by Trovagine and Hologic/GenProbe. MS declares no competing interests.

randomised trial of more than 150 000 women in Mumbai, India, public health workers (similar to community health workers, and defined as women in the community with limited education and experience in working in health programmes) were effective in doing cervical cancer screening by visual inspection with acetic acid.<sup>11</sup> In India, the addition of this screening method by trained public health workers to the routine cervical cancer education led to a significant 31% reduction in cervical cancer mortality over 12 years.

In the trial by Arrossi and colleagues in Argentina,<sup>1</sup> community health workers randomly allocated to the intervention group delivered self-collection kits to women at their homes during routine visits, instructed women on how to obtain a cervicovaginal sample for HPV testing, and transported the gathered samples to health centres. Community health workers in the control group educated women about cervical cancer and HPV testing and encouraged women to visit a health centre for screening. Cervical cancer screening uptake was four times greater in the intervention group (86%) than in the control group (21%) over 12 months (risk ratio 4.02, 95% CI 3.44–4.71).

The novel strategy of using community health workers and self-collection to implement cervical cancer screening leaves many questions unanswered, most importantly the uncertainty of how to follow-up HPV-positive women. In this current trial,<sup>1</sup> women with HPV-positive results from self-collected samples were all referred to colposcopy (n=232), whereas women who tested HPV-positive from clinician-collected samples were triaged with cytology before referral to colposcopy (n=23). The referral of all women with HPV-positive samples for colposcopy might not be a realistic sustainable strategy and would further strain the limited colposcopy services in many low-income and middle-income countries. On the other hand, triaging HPV-positive women with cytology means that women who provide self-collected samples at home must go to health centres for an additional visit, eliminating the convenience of self-collection at home and adding another opportunity for loss to follow-up. More research studies, particularly cost-effectiveness assessments, are needed to understand what the best strategy for follow-up of HPV-positive women would be with this screening strategy, under different resource settings.

Other screening strategies not considered in this study could be adapted on a wider scale. WHO promotes a strategy whereby women who are HPV-positive can be triaged by visual inspection with acetic acid and treated immediately with cryotherapy, thereby eliminating the reported 2 months from HPV test to colposcopy.<sup>12</sup> A lower cost HPV test might also increase the adoption of HPV testing in low-resource settings. All women in this study also had to go to the clinic to get their results, whereas the negative predictive value afforded by a negative HPV test result could be communicated easily back to women without needing to visit the clinic.

Successful scale-up of programmes centred around community health workers is dependent on provision of adequate training, motivation (possibly in the form of material benefits), and supervision of community health workers,<sup>13</sup> which would probably need additional funding; these extra costs to current cervical cancer screening programmes need to be evaluated.

Nevertheless, since networks of community health workers are already providing health services and undertaking health promotion in many countries of low and middle income, and hard-to-reach populations in developed countries, their inclusion in cervical cancer prevention could increase screening coverage, as shown by Arrossi and colleagues in Argentina. Applied research is needed to better understand how community health workers could be incorporated into existing cervical cancer screening programmes to increase coverage and ensure high follow-up.

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